

ADJUSTABLE SPEED DRIVES

	Page
Adjust Your Speed, Any Speed, Precisely--Electrically	Nov. 18
Adjustable-Pitch Sheaves	Jan. 25
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec. 18
Chain-Driven Conveyors Eliminate Field Labor	Jan. 46
Double-Sided V-Belt for Part-Time Rotation	March 45
Friction Drive Provides Completely Variable Speed	April 32
Gearmotor Controls Adjustment of Variable-Pitch Sheaves	June 16
Gears on Discs Give Adjustable Speed	Oct. 32
Helical Gear Pair Makes 52-Degree Drive	Sept. 23
How to Cope with Critical Speeds	April 23
How to Use DC Motors with AC Power	March 24
Hydraulic Coupling Produces Constant Speed from Varying Frequencies	April 36
Power Drives in Tight Spaces	Jan. 34
Pushbutton Speed Selection	Feb. 20
Rocking Chain Drive Regulates Cloth Tension	April 31
Secondary Belt Eliminates Auxiliary Motor	Jan. 39
Sheaves on Shaft Give High-Speed Variation	July 33
Variable-Pitch Sheaves Act as Clutch	Oct. 34
Variable-Speed Drives Speed Material Handling	July 20
Variable-Speed Reducer Cuts Scrap Losses	May 49
Variable-Variable Drive Provides Secondary Synchronization	Jan. 40
Wheels Go Backward, Blade Forward	July 41
Which Variable Speed DC Drive?	July 62

BEARINGS

Air-Shielded Pillow Block Prevents Abrasion	Aug.	25
Ball Bearings Act as Clutch in Eccentric Drive	July	42
Capsule Bearings Protect Speed Reducer on Crane	Dec.	39
Driven Races Reduce Bearing Friction	May	62
Eccentric Pillow Blocks Give Vibratory Motion	March	44
Here Are Pros and Cons of Air-Lubricated Journal Bearings	May	58
How to Check Ball Bearing Measurements	June	48
How to Compute Dynamic Load Ratings	Nov.	46
How to Compute Oil Flow Through a Sleeve Bearing	Dec.	46
How to Lubricate Bearings with Graphite to 1000 F	March	58
How to Use Solid Film Lubricants	June	60
Hydrostatic Bearing Makes Load "Frictionless"	Sept.	26
Lubricated-for-Life vs. Conventional Bearings	Feb.	45
Oil vs. Grease	Jan.	63
Oil-Path Change Stops Bearing Freeze-Up at 450 F	May	49
Plain vs. Rolling Contact Bearings	Feb.	42
Roller Bearing Carries Higher Loads Longer	Sept.	42
Sleeve Bearing Is a Good Anti-Friction Bearing	Oct.	46
Stainless Bearing Permits Rotation at 1400 F	Jan.	49
Tolerance Stack-Up on Gear Trains	July	52
Unbalanced Thrust Loads	Jan.	66
What Is Boundary Lubrication in Oilless Bearings?	April	44
Why Anti-Friction Bearings Wear Out	Feb.	40
You Can Always Depend on a Ball Bearing	Aug.	42

BELTS, PULLEYS

Adjustable-Pitch Sheaves	Jan.	25
Air-Operated Clutch Selects Two Speeds	Dec.	37
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Belt Drive Cuts Upkeep 95%	Jan.	51
Design and Application of Belts, Chain, and Gears	Sept.	60
Double-Sided V-Belt Drives Contrarotating Cutters	Aug.	30
Double-Sided V-Belt for Part-Time Rotation	March	45
Eccentric Pillow Blocks Give Vibratory Motion	March	44
Enclosed Gearing Stops Abrasive Wear	Jan.	48
Electric Clutches Give Pushbutton Control	Nov.	35
Flat Belt Improves Low Speed Efficiency	Feb.	29
Four Worms Synchronize Eight Rolls	Aug.	30
Gear Train and Timing Belt Make Power Unit Portable	May	52
Gearmotor Controls Adjustment of Variable-Pitch Sheaves	June	16
Helical Gear Pair Makes 52-Degree Drive	Sept.	23
How to Cope with Critical Speeds	April	23
Keep Your Power Source Close to Your Work	Aug.	18
Multi-Rib Belt Saves One-Third Space	Sept.	27
Open Drive Resists Marine Contamination	Feb.	56
Overrunning Clutch Prevents Shutdown	Aug.	24
Pneumatic Brakes Give Precise Torque Control	Aug.	26
Push Button Speed Selection	Feb.	20
Remote Motor Installation Overcomes Corrosion Problem	April	34
Secondary Belt Eliminates Auxiliary Motor	Jan.	39
Sheaves on Shaft Give High-Speed Variation	July	33
Survey on Gears, V-Belts, and Roller Chain	July	8

Three-Strand Belt, Gearmotor Eliminate Gear Train.	April	39
Timing Belt Damps Vibration, Eliminates Noise	Dec.	41
Timing Belt Drive Reduces Sheave Diameter	July	42
Timing Belt Solves Slippage Problem	March	46
Timing Belt Stops Vibration	Feb.	29
Timing Belt Works Well in Abrasive Atmosphere	Dec.	41
Twisted Timing Belt Synchronizes Three Spindles	Feb.	30
Variable-Pitch Sheaves Act as Clutch	Oct.	34
Variable-Speed Reducer Cuts Scrap Losses	May	49
V-Belt and Pulleys Drive Shaft with Less Horsepower	May	51
V-Belts Work Successfully on Flat Pulley	July	35
V-Link Belt Stops Long Span Stretch	Feb.	30
Wheels Go Backward, Blade Forward	July	41

BRAKES, CLUTCHES

Adjust Your Speed, Any Speed, Precisely--Electrically	Nov.	18
Air-Cooled Clutch Dissipates Heat During Drive Reversal	May	45
Air-Operated Clutch Selects Two Speeds	Dec.	37
Ball Screw Smooths Blimp Mooring	Dec.	36
Clutch Brake Fits Short Space Needs	Feb.	27
Clutch Brake Holds Load During Power Failure	March	40
Clutch Brakes Reduce Maintenance, Eliminate Motor	April	38
Clutch-Nuts Perform Multiple Functions	Aug.	28
Double-Ended Motor Cuts In After Work Cycle	Jan.	46
Electric Clutches Control Oscillating Drive	Oct.	27
Electric Clutches Control Switch Actuator	May	54
Electric Clutches Give Pushbutton Control	Nov.	35
Friction Drive Provides Completely-Variable Speed	April	32

Gear and Brakehub Sustain Start-Stop Action	June	29
Gearmotor Drives Through Larger Motor and Clutch	June	32
Gears on Discs Give Adjustable Speed	Oct.	32
How to Determine Slip Clutch Position	Feb.	15
Increase Starting Torque with Centrifugal Clutches	April	28
Interchangeable Drives for Modular Machines	April	20
Leather-Faced Clutches Transmit Power Smoothly	Aug.	31
Mag-Amp Drive Points Atlas Skyward	Dec.	33
Magnetic Clutch Brake Cuts Downtime 50%	Nov.	38
Motorized Wheel Increases HP/Space Ratio	Oct.	60
Overrunning Clutch Prevents Shutdown	Aug.	24
Overrunning Clutches Perform Dual-Speed Selection	Aug.	16
Overrunning Clutches Remove Drive Load	Nov.	37
Pantograph Magnifies Leadscrew Accuracy	Dec.	31
Parallel Drives Keep Production Rolling	Feb.	18
Pneumatic Brakes Give Precise Torque Control	Aug.	26
Power Drives in Tight Spaces	Jan.	34
Pushbutton Speed Selection	Feb.	20
Repetitive Shock: How to Cope with It	Jan.	28
Twin Drives Effectively Reduce Size/HP Ratio	May	26
Vacuum Cylinder Controls Clutch Brake on Press	March	42
Variable-Speed Drives Speed Material Handling	July	20
Wheels Go Backward, Blade Forward	July	41

CHAIN, SPROCKETS

Air Cylinder Keeps Chain Tension Constant	July	40
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Bronze Sprockets, Rubber Tire Eliminate Fire Hazard	March	41

Chain Drive Solves Dual-Speed Timing Problem	July	37
Chain Drive Synchronizes Conveyor and Knife Speed	June	35
Chain Drives Synchronize Transfer Ratios	Oct.	29
Chain Sprockets Produce Reciprocating Motion	March	37
Design and Application of Belts, Chain, and Gears	Sept.	60
Eccentric Pillow Blocks Give Vibratory Motion	March	44
Fluid Coupling Answers Speed Control Problem	June	34
Fluid Coupling, Jaw Clutches Give Two-Speed Drive	July	35
Gearmotor, Chain Eliminate Conveyor Breakdowns	June	32
Gearmotor Controls Adjustment of Variable-Pitch Sheaves	June	16
Gearmotors Synchronize Different Wheel Speeds	Feb.	28
Gears on Discs Give Adjustable Speed	Oct.	32
Guided Chain Drives Close-Center Rolls	March	43
How to Select a Roller Chain Drive	March	19
How to Select a Silent Chain Drive	April	17
Interchangeable Drives for Modular Machines	April	20
Keep Your Power Source Close to Your Work	Aug.	18
Leather-Faced Clutches Transmit Power Smoothly	Aug.	31
Mag-Amp Drive Points Atlas Skyward	Dec.	33
Overrunning Clutches Perform Dual-Speed Selection	Aug.	16
Pantograph Magnifies Leadscrew Accuracy	Dec.	31
Rocking Chain Drive Regulates Cloth Tension	April	31
Roller Chain in Parallel Stops Gear Breakage	June	33
Roller Chain Life Doubles When Run Dry	Nov.	39
Roller Chain Makes Low-Cost Ring Gear	Oct.	30
Silent Chain Solves Slippage Problem	July	36
Simple Relay Circuit Gives 2-Speed Control	March	44
Survey on Gears, V-Belts, and Roller Chain	July	8
Two Coupled Motors Give 4-Speed Drive	Sept.	31

CONTROLS

Adjust Your Speed, Any Speed, Precisely—Electrically	Nov.	18
Air Cylinder Keeps Chain Tension Constant	July	40
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Cable Drive Improves Servo System	March	30
Double-Sided V-Belt for Part-Time Rotation	March	45
Electric Clutches Control Switch Actuator	May	54
Flexible Shafts Transmit Power Great Distances	May	21
Fluid Coupling Answers Speed Control Problem	June	34
How Hydraulics Produce Multiple Shaft Rotation	Oct.	22
How to Control Shaft Position with Punched Tape	April	25
How to Use DC Motors with AC Power	March	24
Mag-Amp Drive Points Atlas Skyward	Dec.	33
Overrunning Clutches Perform Dual-Speed Selection	Aug.	16
Pneumatic Brakes Give Precise Torque Control	Aug.	26
Pushbutton Speed Selection	Feb.	20
Return Springs Eliminate Motor Reversal	Nov.	40
Sheaves on Shaft Give High-Speed Variation	July	33
Simple Relay Circuit Gives 2-Speed Control	March	44
Spring Drive Eliminates Servo Motor in Missile	July	24
Vacuum Cylinder Controls Clutch Brake on Press	March	42
Which Variable-Speed DC Drive?	July	62
Worm Reducer Acts as Hydraulic Control	Sept.	28

COUPLINGS, SHAFTING

Adjust Your Speed, Any Speed, Precisely--Electrically	Nov.	18
Air-Operated Clutch Selects Two Speeds	Dec.	37
Ball and Socket Universal Simplifies Mill Drive	April	40
Constant Speed Universals Stabilize Roll Velocity	Feb.	26
Dry Fluid Drive Solves a Sanitation Problem	March	38
Flexible Shafts Transmit Power Great Distances	May	21
Fluid Coupling Answers Speed Control Problem	June	34
Fluid Coupling, Jaw Clutches Give Two-Speed Drive	July	35
Fluid Coupling Stops Bearing Failure	Sept.	25
Gearmotor Drives Through Larger Motor and Clutch	June	32
How to Select Flexible Shafting	June	19
Hydraulic Coupling Produces Constant Speed from Varying Frequencies	April	36
Repetitive Shock: How to Cope with It	Jan.	28
Right-Angle Gears Synchronize Film-Winding Pulleys	April	35
Why Not Transmit Power with Hollow Shafts?	March	28

ENGINES

Ball Screw Smooths Blimp Mooring	Dec.	36
Electric Clutches Give Pushbutton Control	Nov.	35
Gas Turbine Auxiliary Power Demand Is Increasing	May	70
Multi-Rib Belt Saves One-Third Space	Sept.	27
Twin Drives Effectively Reduce Size/HP Ratio	May	26
Variable-Pitch Sheaves Act as Clutch	Oct.	34

GEARS

Change Gears Eliminate Variable-Speed Sheave	June	36
Choose Your Gears by How Well They're Made	June	12
Clutch-Nuts Perform Multiple Functions	Aug.	28
Design and Application of Belts, Chain, and Gears	Sept.	60
Differential Above Axle Lets Driving Wheel Steer	Sept.	18
Double Helical Gears Act as Positive Pump Submerged in Vat	May	50
Double Reduction Gearing Cuts Conveyor Speeds to 3 FPM	May	51
Electric Clutches Control Oscillating Drive	Oct.	27
Electric Clutches Give Pushbutton Control	Nov.	35
Eliminate the Guess Work in Involute Spur Gears	Feb.	23
Eliminating Involute Crown Stops Heavy Loading	March	38
Enclosed Gearing Eliminates Sanitation Problem in Food Industry	April	33
Fine-Pitch Worm and Helical Gear Sets	Aug.	60
Flea-Power Is the Forerunner of Miniaturization	July	26
Gear and Brakehub Sustain Start-Stop Action	June	29
Gear Train and Timing Belt Make Power Unit Portable	May	52
Gear Train Gets 30 Turns from 90-Degree Actuator	April	37
Gearmotor Powers Two Gear Trains at Different Speeds	June	30
Gears on Discs Give Adjustable Speed	Oct.	32
Helical Gear Pair Makes 52-Degree Drive	Sept.	23
How to Check Spur Gear Efficiency	March	68
Hydro-Mechanical Drive Gives Smooth Deceleration	Aug.	23
Hydrostatic Bearing Makes Load "Frictionless"	Sept.	26
Increase Life of Open Gears with Spray Lubrication	Oct.	19
Keep Your Power Source Close to Your Work	Aug.	18
Motorized Wheel Increases HP/Space Ratio	Oct.	60
Parallel Drives Keep Production Rolling	Feb.	18

Planetary Gears Replace Costly Hand Operation	June	36
Reduce Noise with Double Helical Gears	Jan.	30
Return Springs Eliminate Motor Reversal	Nov.	40
Right Angle Gears Synchronize Film-Winding Pulleys	April	35
Rods in Tension Make Lightweight Drive	Dec.	40
Roller Chain in Parallel Stops Gear Breakage	June	33
Special-Form Gears Permit Center Distance Change	May	48
Stop Operating Noise with Shaved Gears	March	33
Survey on Gears, V-Belts, and Roller Chain	July	8
Tolerance Stack-Up on Gear Trains	July	52
Total Composite Error and Position Error	Jan.	76
Twin Drives Effectively Reduce Size/HP Ratio	May	26
What Causes Gear Tooth Scoring	April	62

GEARMOTORS

Adjust Your Speed, Any Speed, Precisely--Electrically	Nov.	18
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Cable Drive Improves Servo System	March	30
Double Reduction Gearing Cuts Conveyor Speeds to 3 FPM	May	51
Enclosed Gearing Eliminates Sanitation Problem in Food Industry	April	33
Flea-Power Is the Forerunner of Miniaturization	July	26
Gearmotor, Chain Eliminate Conveyor Breakdowns	June	32
Gearmotor Controls Adjustment of Variable-Pitch Sheaves	June	16
Gearmotor Drives Through Larger Motor and Clutch	June	32
Gearmotor Makes Obsolete Press Valuable Machine	July	34
Gearmotor Powers Two Gear Trains at Different Speeds	June	30
Gearmotors Synchronize Different Wheel Speeds	Feb.	28

Motor Minus Stator Runs in Cyclotrom's Magnetic Field	March	46
Overrunning Clutch Prevents Shutdown	Aug.	24
Roller Chain Makes Low-Cost Ring Gear	Oct.	30
Three-Strand Belt, Gearmotor Eliminate Gear Train	April	39
Variable-Variable Drive Provides Secondary Synchronization	Jan.	40
Vertical Ratio Motors Replace Blocks and Tackle	March	40

LUBRICANTS

Five Methods to Determine Grease Yield Points	Feb.	54
How to Compute Oil Flow Through a Sleeve Bearing	Dec.	46
How to Lubricate Bearings with Graphite to 1000 F	March	58
How to Use Solid Film Lubricants	June	60
Hydrostatic Bearing Makes Load "Frictionless"	Sept.	26
Increase Life of Open Gears with Spray Lubrication	Oct.	19
Lubricated-for-Life vs. Conventional Bearings	Feb.	45
Oil vs. Grease	Jan.	63
Oil-Path Change Stops Bearing Freeze-Up at 450 F	May	49
Plain vs. Rolling Contact Bearings	Feb.	42
Sleeve Bearing Is a Good Anti-Friction Bearing	Oct.	46
What Is Boundary Lubrication in Oilless Bearings?	April	44

MOTORS

Adjust Your Speed, Any Speed, Precisely--Electrically	Nov.	18
Air-Operated Clutch Selects Two Speeds	Dec.	37
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Ball Screw Smooths Blimp Mooring	Dec.	36
Bronze Sprockets, Rubber Tire Eliminate Fire Hazard	March	41

Double-Ended Motor Cuts in After Work Cycle	Jan.	46
Eccentric Motors Produce Sine Wave Forces	Feb.	26
Electric Motor Automates Welding Process	April	41
Flea-Power is the Forerunner of Miniaturization	July	26
Flexible Shafts Transmit Power Great Distances	May	21
Fractional HP Motor Powers Portable Five-Gear Train	March	38
Gears on Discs Give Adjustable Speed	Oct.	32
How to Compute Motor Size and Speed	Jan.	32
How to Control Shaft Position with Punched Tape	April	25
How to Use DC Motors with AC Power	March	24
Hydraulic Motor Gives Infinitely Variable Speed Control	Jan.	50
Hydraulic Motor Keeps Fabric Tension Constant	Jan.	47
Hydro-Mechanical Drive Gives Smooth Deceleration	Aug.	23
Mag-Amp Drive Points Atlas Skyward	Dec.	33
Motor Minus Stator Runs in Cyclotron's Magnetic Field	March	46
Motorized Wheel Increases HP/Space Ratio	Oct.	60
New Type Brush Cuts Torque on Small Motor-Rotor	June	31
Overrunning Clutches Remove Drive Load	Nov.	37
Pantograph Magnifies Leadscrew Accuracy	Dec.	31
Parallel Drives Keep Production Rolling	Feb.	18
Push Button Speed Selection	Feb.	20
Two Coupled Motors Give 4-Speed Drive	Sept.	31
Unitized Drive Eliminates Downtime	Jan.	42
Variable-Speed Drives Speed Material Handling	July	20
Variable-Speed Reducer Cuts Scrap Losses	May	49
V-Belt and Pulleys Drive Shaft with Less Horsepower	May	51
What Factors Must Be Considered in Selecting Motors?	June	22
Which Variable Speed DC Drive	July	62
Why Not Increase Operating Speed?	May	24
Worm Reducer Acts as Hydraulic Control	Sept.	28

SPEED REDUCERS

Automate at Low Cost with Mechanical Adjustable-Speed Drives. . .	Dec.	18
Ball Screw Smooths Blimp Mooring	Dec.	36
Cable Drive Improves Servo System	March	30
Capsule Bearings Protect Speed Reducer on Crane	Dec.	39
Consider Cost Factors When Selecting Right-Angle Reducers	March	22
Double-Ended Motor Cuts In After Work Cycle	Jan.	46
Electric Clutches Control Oscillating Drive	Oct.	27
Enclosed Gearing Stops Abrasive Wear	Jan.	48
Fluid Coupling, Jaw Clutches Give Two-Speed Drive	July	35
Fluid Coupling Stops Bearing Failure	Sept.	25
Four Worms Synchronize Eight Rolls	Aug.	30
Fractional HP Motor Powers Portable Five-Gear Train	March	38
Gears on Discs Give Adjustable Speed	Oct.	32
How to Check Spur Gear Efficiency	March	68
Hydraulic Motor Keeps Fabric Tension Constant	Jan.	47
Hydro-Mechanical Drive Gives Smooth Deceleration	Aug.	23
Open Drive Resists Marine Contamination	Feb.	56
Overrunning Clutches Perform Dual-Speed Selection	Aug.	16
Overrunning Clutches Remove Drive Load	Nov.	37
Pantograph Magnifies Leadscrew Accuracy	Dec.	31
Parallel Drives Keep Production Rolling	Feb.	18
Reduce Noise with Double Helical Gears	Jan.	30
Roller Chain Life Doubles When Run Dry	Nov.	39
Speed Increaser More Efficient than Large Motor	May	53
Speed Reducer Acts as Differential	Nov.	41
Twin Drives Effectively Reduce Size/HP Ratio	May	26
Two Coupled Motors Give 4-Speed Drive	Sept.	31

Variable-Speed Drives Speed Material Handling	July	20
Variable-Speed Reducer Cuts Scrap Losses	May	49
Variable-Variable Drive Provides Secondary Synchronization	Jan.	40
Worm Reducer Acts as Hydraulic Control	Sept.	28

VARIABLE SPEED TRANSMISSIONS

Adjustable-Pitch Sheaves	Jan.	25
Automate at Low Cost with Mechanical Adjustable-Speed Drives	Dec.	18
Differential Above Axle Lets Driving Wheel Steer	Sept.	18
Electric Clutches Control Oscillating Drive	Oct.	27
Electric Clutches Give Pushbutton Control	Nov.	35
Hydraulic Motor Gives Infinitely Variable Speed Control	Jan.	50
Interchangeable Drives for Modular Machines	April	20
Motorized Wheel Increases HP/Space Ratio	Oct.	60
Pushbutton Speed Selection	Feb.	20
Twin Drives Effectively Reduce Size/HP Ratio	May	26
Variable-Pitch Sheaves Act as Clutch	Oct.	34

NOMOGRAMS

How to Compute Belt or Chain Length	June	53
How to Compute Pulley or Sprocket Center Distance	June	52
Nomogram of A, B, C, D, and E V-Belts	March	61
Nomogram of C, D, E Belts or Chain Lengths	July	56
Nomogram of Inertial Load Variations	Nov.	58
Nomogram of Shaft Shearing Stress	April	49
Nomogram of Speed-Horsepower-Torque	Feb.	48

Nomogram of Torsional Shaft Deformation	Dec.	52
Nomogram of V-Belts and Pulley Speed	March	63
Nomogram for Number of Involute Gear Teeth	July	57
Nomograms for Complete Multiple V-Belt Drive (Part 1)	Aug.	56
Nomograms for Complete Multiple V-Belt Drive (Part 2)	Sept.	56
Nomograms for Planetary Gear Speed and Number of Teeth	May	66
Pulley or Gear Speed vs. Diameter	Jan.	70
Simplified Nomogram for Planetary Gears	Dec.	53
Torsional Strength of Hollow vs. Solid Shafts	Feb.	49